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EXAMINER

ALVO, M

ART UNIT

PAPER NUMBER

1731

DATE MAILED: 09/18/98

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No. 08/925,321	Applicant(s) VUORINEN et al
	Examiner Steve Alvo	Group Art Unit 1731

Responsive to communication(s) filed on Jan 27, 1998.

This action is FINAL.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

Claim(s) 1, 3-8, and 10-31 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

Claim(s) _____ is/are allowed.

Claim(s) 1, 3-8, and 10-31 is/are rejected.

Claim(s) _____ is/are objected to.

Claims _____ are subject to restriction or election requirement.

Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The drawing(s) filed on _____ is/are objected to by the Examiner.

The proposed drawing correction, filed on _____ is approved disapproved.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All Some* None of the CERTIFIED copies of the priority documents have been

received.

received in Application No. (Series Code/Serial Number) 08/542,646.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

Notice of References Cited, PTO-892

Information Disclosure Statement(s), PTO-1449, Paper No(s). 14

Interview Summary, PTO-413

Notice of Draftsperson's Patent Drawing Review, PTO-948

Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3-8 and 10-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 511 695 in view of ADMITTED PRIOR ART (page 4, lines 13-22 of the instant specification) with or without LACHENAL ET AL with or without MARECHEL.

EP 511 695 teaches treating chemical cellulose pulp (see Example 1) produced by alkaline delignification (sulphate pulp) having a kappa number under 24 (kappa number 17) with an acid at a pH of 2.3 (Table I) at a temperature of 60° C for 30 minutes. This is the same hexenuronic acid removal step taught by Applicant. It would have been obvious to one of ordinary skill in the art that the sulphate pulp of EP 511 695 would contain hexenuronic acid as such is taught by the ADMITTED PRIOR ART. The sulphate (kraft) pulp of EP 511 695 would contain hexenuronic acid as it is contained in all sulphate pulps. The mere discovery of an additional, possibly heretofore unrecognized feature of a process, otherwise obvious over the prior art, does not alone render that process unobvious. In the instant case EP 511 695 teaches treating kraft pulp with the same acid treatment used by Applicant prior to a bleaching step. The discovery that the acid step removes hexenuronic acid, does not render the process unobvious as the acid step of EP 511 695 would react on the kraft pulp (which contains hexenuronic acid) in the same manner taught by Applicant, e.g. remove hexenuronic acid. See *In re Best* 195 USPQ 430. The claimed process

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steps do not differ from the process steps of EP 511 695, e.g. treating kraft pulp with an acid followed by bleaching. It would have been obvious to use the higher temperatures disclosed by EP 511 695, e.g. up to 95°C, to speed up the metal ion removal step of EP 511 695 as chemical reactions are known to be temperature rate effective. If this is not obvious then LACHENAL ET AL teaches that raising the temperature in the acid pretreatment results in a further decrease in kappa No. after the bleaching stage and further improves the bleachability of the pulp as kraft lignin becomes more susceptible to solubilization (See LACHENAL ET AL, page 147, second half of column 1, including Table 4). It would have been obvious to one of ordinary skill in the art to further reduce the kappa No. And increase the bleaching of EP 511 695 by increasing the temperature of the acid treatment as taught by LACHENAL ET AL. Claim 3 is rejected as the equation includes values within the time range of EP 511 695, e.g. temperature of 95°C and time of 120 minutes (see page 3, lines 55-59). See EP 511 695, page 3, lines 48-54 for treating hardwood kraft pulp with a kappa No. As low as 5. See page 3, lines 6-10 for P, Z, O, P_A, P-Z and (PO)-Z bleach sequences. Claims 20 and 21 are rejected as EP 511 695 teaches using further bleach stages to obtain brightness levels above 80 ISO (see Example 3). MARECHEL teaches that acid hydrolysis at high temperatures , e.g. 95-100°C (page 264, line 3), improves the following bleaching of pulp (e.g. peroxide, oxygen or chlorine). It would have been obvious to use the 95°C temperature of the EP 511 695 to obtain the improvements in subsequent bleaching as taught by MARECHEL. MARECHEL also teaches that the acid hydrolysis removes organic acids (pages 272-278).

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It is noted that the independent claims do not call for a specific treatment time. Claims 18, 20 and 27 express times in terms of the equation $t=0.5 \exp(10517 \text{ divided by } [(T+273)-24])$. It is not seen how the disclosed range of time (5 minutes-10 hours) is obtained from the disclosed range of Temperatures (85-180°C). To clarify the record sample calculations should be provided for 85°C and 180°C.

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The first Declaration of Mr. Vuorinen in the Parent Application has been considered but does not overcome the rejection as the comparison was made to LACHENAL ET AL and not to the primary reference (EP 511 695). EP 511 695 which teaches a preferred pH of 2-4. This corresponds to the disclosed pH of 2-5 and the disclosed preferred pH of 2.5 to 4 (specification, page 8, lines 19-22). Although EP 511 695 teaches a preferred temperature of 40-80°C, temperatures up to 95°C are taught (page 3, lines 55-56). The temperature range of EP 511 695 overlaps the claimed range. See Ex parte Lee 31 USPQ 2d 1105,1106 . Besides LACHENAL ET AL discloses using a hot acid stage (up to 90°C) at a pH 2.0 for a time of 2 hours. This does not significantly differ from the conditions taught by Applicant. Paragraph 12 of the Declaration states that LACHENAL optimally treats the pulp at a pH of 2 for a time of 60-80°C. From Table 4 of LACHENAL ET AL it would have been obvious to use a temperature of 90°C to obtain an improved Kappa No. (17.5) and increased bleaching. Exhibit D of the Declaration shows that at pH of 2.0 only 6.5 meq/kg of hexenuronic acid is removed is not convincing as this is at 70°C and not at the 95°C of EP 511 695 or the 90°C of LACHENAL ET AL. Besides, EP 511 695 teaches a preferred temperature of up to 80°C. Applicant has not compared the 80°C of EP 511 695 to

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the claimed 85°C. Besides it would have been obvious to use the 95°C of EP 511 695 for the advantages taught by MARECHAL.

The Second Declaration of Mr Vuorinen is not convincing as MARECHAL concludes that under certain conditions the viscosity decrease is acceptable, e.g. page 262, second paragraph and last paragraph on page 279.

The advantage obtained by Applicant is a reduction in bleach chemical consumption. LACHENAL teaches that increases the pretreatment temperature results in an increased bleaching, as represented by the decreased Kappa No. in Table 4 after the peroxide bleaching. It would have obvious to the artisan that increasing the bleaching would enable the artisan to use a lesser amount of bleaching agent. Thus any advantage obtained by Applicant would have been obvious from the combination of references.

When filing an "**Official**" FAX in Art Unit 1731, please indicate in the Header (upper right) "**Official**" for papers that are to be entered into the file. The "**Official**" FAX phone number for this Art Unit is **(703) 305-7718** for all papers except amendments after final, for amendments after final the FAX number is 703-305-3599. When filing an "**Unofficial**" FAX in Group 1730, please indicate in the Header (upper right) "**Unofficial**" for Draft Documents and other Communications with the PTO that are not for entry into the file of the application. This will expedite processing of your papers. The "**Unofficial**" FAX phone number for this Art Unit (1731) is **(703) 305-7115**.

Any inquiry concerning this communication or earlier communications from the **primary examiner** should be directed to **Steve Alvo** whose telephone number is **(703) 308-2048**. The Examiner can normally be reached on Monday - Friday from **6:30 AM - 3:00 PM (EST)**.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,
Mr. Stanley Silverman, can be reached on 703-308-3837.

Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the **Group receptionist** whose telephone number is **(703) 308-0661**.



STEVE ALVO
PRIMARY EXAMINER
ART UNIT 1731

MSA
September 17, 1998